

Claims

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1. Apparatus for carrying out mass transfer processes with high-viscosity liquids, particularly for boiling down and/or devolatilizing polymer melts, comprising at least one vertically disposed vessel (1) having a feeder means (4) for the liquid to be treated, an outlet (7) for volatile components and an outlet (6) for the treated liquid, the feeder means (4) being equipped with a distributor element (3) having a multiplicity of orifices (8, 10) for subdividing the high-viscosity liquid to be treated into a multiplicity of individual streams, characterized in that essentially vertically arranged wire loops (2) are disposed in the vicinity of the orifices (8, 10), along which wire loops the high-viscosity liquid runs off under the action of gravity.
  2. Apparatus according to Claim 1, characterized in that the distributor element is a perforated plate.
  3. Apparatus according to Claim 1 or 2, characterized in that the distributor element (3) includes at least one horizontally arranged tube (3) which has orifices (8) pointing downwards and/or upwards.
  4. Apparatus according to any one of Claims 1 to 3, characterized in that the wire loops (2) in the vicinity of the orifices (8, 10) in the distributor element (3, 9) are disposed detachably.
  5. Apparatus according to Claims 3 to 4, characterized in that the distributor element comprises at least one horizontally arranged tube (3) which has slotted orifices (8) pointing upwards.
  6. Apparatus according to Claim 5, characterized in that the distributor element comprises at least one horizontally arranged tube (3) which has slotted orifices (8) pointing upwards, into which the wire loops (2) are clipped.
  7. Apparatus according to any one of Claims 1 to 6, characterized in that two, three or more of the wire loops (2) at a time are combined into a basket-like lattice (14) or wire mesh.

8. Apparatus according to Claim 7, characterized in that two or more adjacent lattices (14) or wire meshes are linked to one another.
- 5 9. Apparatus according to any one of Claims 1 to 8, characterized in that the wire loops (2) are additionally attached to the vessel bottom.
- 10 10. Apparatus according to any one of Claims 1 to 9, characterized in that the wire loops can be heated, particularly by means of electric resistance heating means.
- 15 11. Apparatus according to any one of Claims 1 to 10, characterized in that the distributor elements (3, 9) are formed by heat exchange tubes (12) which are vertically arranged in the vessel (1), debauch into the vessel (1) and have orifices (8), the wire loops (2) being attached to the bottom ends of said heat exchange tubes.
- 20 12. Apparatus according to any one of Claims 1 to 11, characterized in that the area enclosed by a wire loop is from  $0.5 \text{ cm}^2$  to  $2500 \text{ cm}^2$ .
- 25 13. Apparatus according to any one of Claims 1 to 12, characterized in that the wire loops (2) taper in the direction of flow of the liquid and, in particular, terminate in an acute angle at their bottom ends.
- 30 14. Apparatus according to any one of Claims 1 to 13, characterized in that the vessel (1) is designed to be heatable and/or coolable, and in particular is provided with a jacket for an electric heater or for a heat transfer medium to be passed through.
- 35 15. Apparatus according to any one of Claims 1 to 14, characterized in that the top ends of the wire loops (2) are disposed at different orifices (8, 10), particularly at distant orifices not disposed directly next to one another.
16. Apparatus according to any one of Claims 1 to 15, characterized in that one or more wire lattices (15) essentially arranged horizontally above one another are additionally provided below the orifices (8, 10).

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17. Use of the apparatus according to any one of Claims 1 to 16 for boiling down and devolatilizing high-viscosity liquids, particularly for boiling down and/or devolatilizing polymer solutions or polymer melts, equally preferably polycarbonate solutions or polycarbonate melts and the use for carry out chemical reactions between the liquid layer in the wire loop and the surrounding gas space which contains a reactive gas component, and for condensation reactions.
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END A<sub>1</sub>

ADD A<sub>2</sub> >

TOGETHER WITH THE DRAWINGS